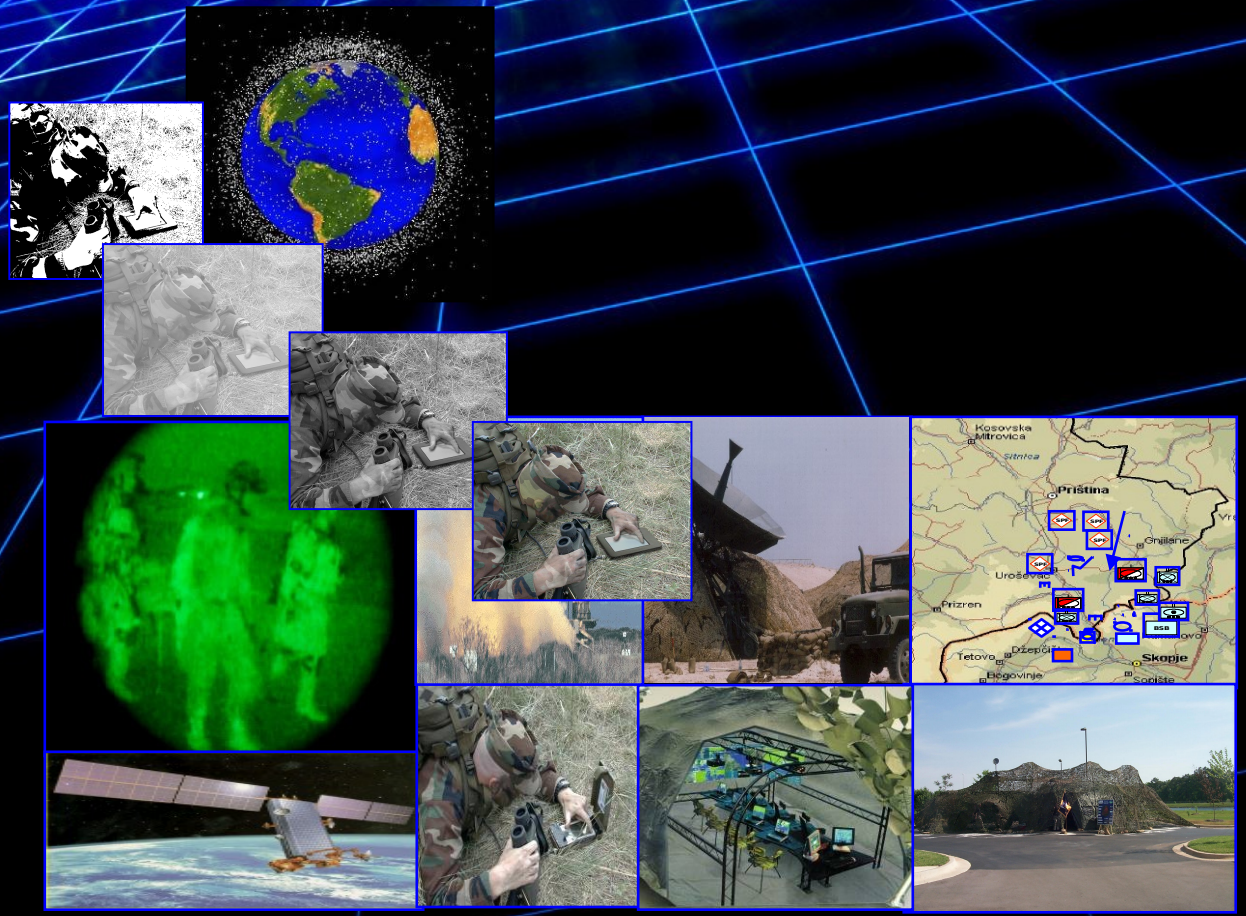
Space and Missile Defense Battle Lab

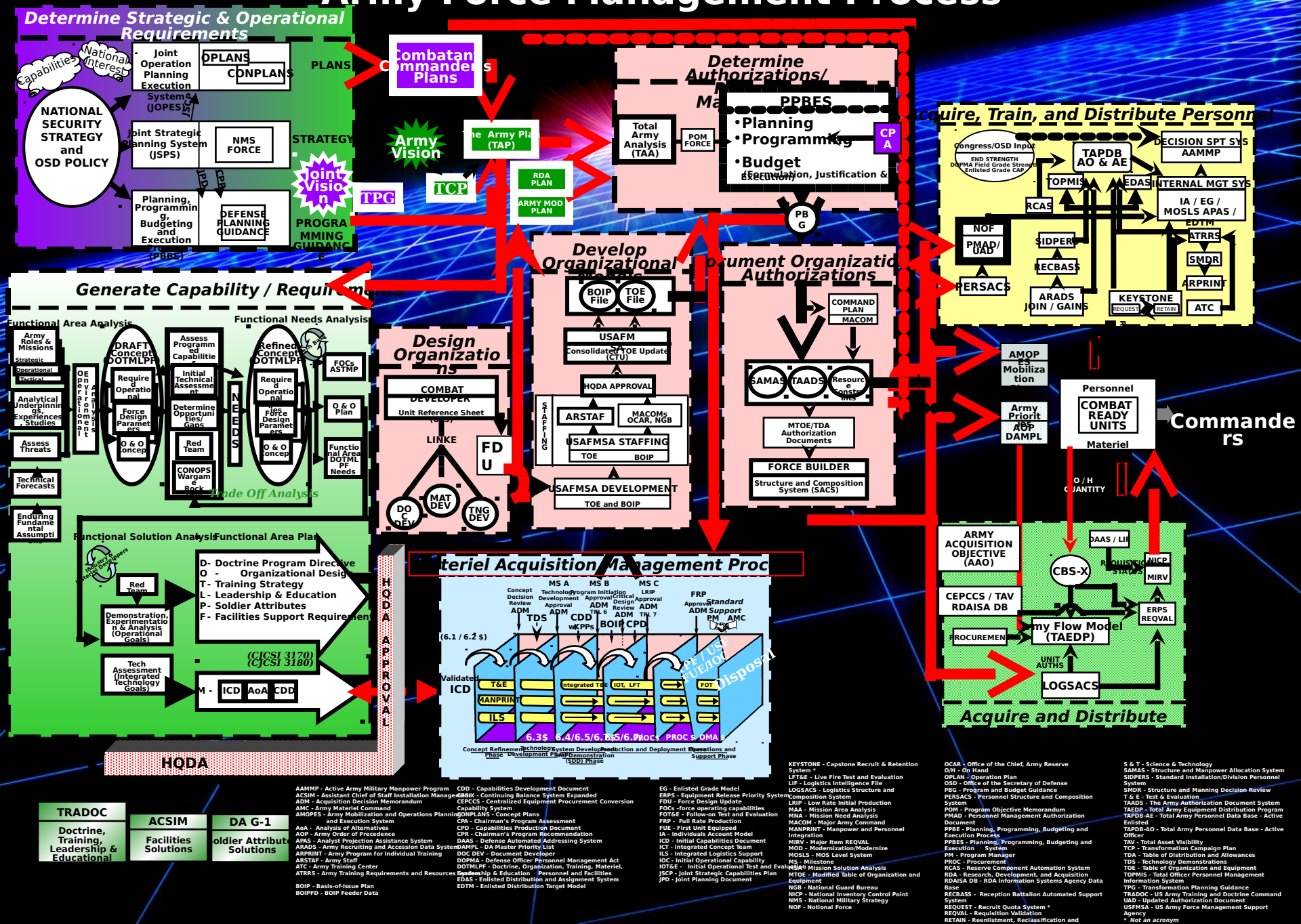
Space and Missile Defense - From Concept to Reality

BATTLE LABS . . .

Rapidly infuse innovative technology, concepts, and doctrine to the warfighters, solving their most critical needs.



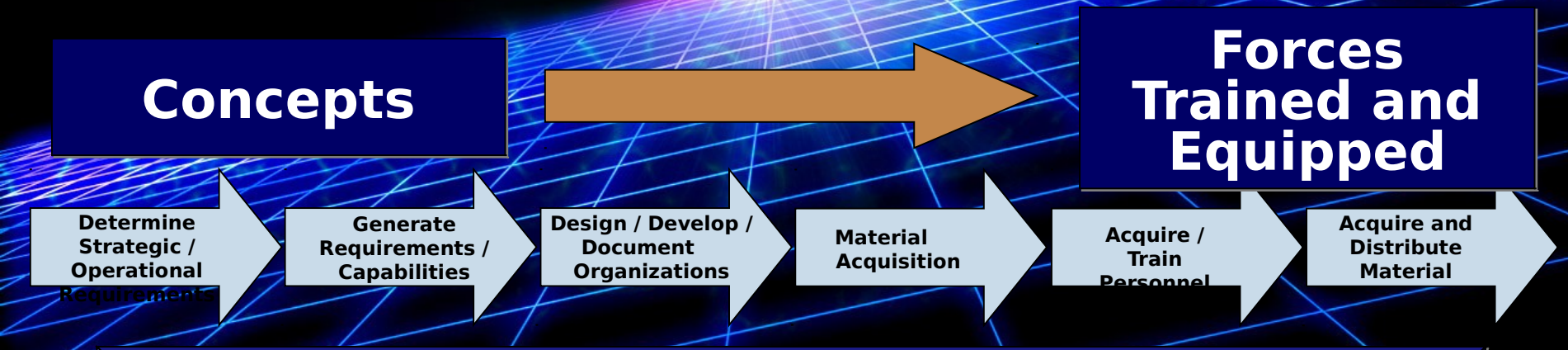
-- Army Force Management Process--



TRADOC	ACSIM	DA G-1
Doctrine, Training, Leadership & Educational	Facilities Solutions	oldier Attribute Solutions

AAMMP - Active Army Military Manpower Program
ACSIM - Assistant Chief of Staff Installation Management
ADM - Acquisition Decision Memorandum
AMC - Army Materiel Command
AMOPES - Army Mobilization and Operations Planning and Execution System
AoA - Analysis of Alternatives
AOP - Army Order of Precedence
APAS - Analyst Projection Assistance System
ARADS - Army Recruiting and Accession Data System
ARPRINT - Army Program for Individual Training
ARSTAF - Army Staff
ATC - Army Training Center
ATRRS - Army Training Requirements and Resources System
BOIP - Basis-of-Issue Plan
BOIPFD - BOIP Feeder Data
CDD - Capabilities Development Document
CBS-X - Continuing Balance System Expanded
CEPCCS - Centralized Equipment Procurement Conversion Capability System
CONPLANS - Concept Plans
CPA - Chairman's Program Assessment
CPD - Capabilities Production Document
CPR - Chairman's Program Recommendation
DAAS - Defense Automated Addressing System
DAMPL - DA Master Priority List
DOC DEV - Document Developer
DOPMA - Defense Officer Personnel Management Act
DOTMLPF - Doctrine, Organization, Training, Materiel, Leadership & Education Personnel and Facilities
EDAS - Enlisted Distribution and Assignment System
EDTM - Enlisted Distribution Target Model
EG - Enlisted Grade Model
ERPS - Equipment Release Priority System
FDU - Force Design Update
FOCs -force operating capabilities
FOT&E - Follow-on Test and Evaluation
FRP - Full Rate Production
FUE - First Unit Equipped
IA - Individuals Account Model
ICD - Initial Capabilities Document
ICT - Integrated Concept Team
ILS - Integrated Logistics Support
IOC - Initial Operational Capability
IOT&E - Initial Operational Test and Evaluation
JSCP - Joint Strategic Capabilities Plan
JPD - Joint Planning Document
KEYSTONE - Capstone Recruit & Retention System *
LFT&E - Live Fire Test and Evaluation
LIF - Logistics Intelligence File
LOGSACS - Logistics Structure and Composition System
LRIP - Low Rate Initial Production
MAA - Mission Area Analysis
MNA - Mission Need Analysis
MACOM - Major Army Command
MANPRINT - Manpower and Personnel Integration
MIRV - Major Item REQVAL
MOD - Modernization/Modernize
MOSLS - MOS Level System
MS - Milestone
MSA - Mission Solution Analysis
MTOE - Modified Table of Organization and Equipment
NGB - National Guard Bureau
NICP - National Inventory Control Point
NMS - National Military Strategy
NOF - Notional Force
OCAR - Office of the Chief, Army Reserve
O/H - On Hand
OPLAN - Operation Plan
OSD - Office of the Secretary of Defense
PBG - Program and Budget Guidance
PERSACS - Personnel Structure and Composition System
POM - Program Objective Memorandum
PMAD - Personnel Management Authorization Document
PPBE - Planning, Programming, Budgeting and Execution Process
PPBES - Planning, Programming, Budgeting and Execution System
PM - Program Manager
PROC - Procurement
RCAS - Reserve Component Automation System
RDA - Research, Development, and Acquisition
RDAISA DB - RDA Information Systems Agency Data Base
RECBASS - Reception Battalion Automated Support System
REQUEST - Recruit Quota System *
REQVAL - Requisition Validation
RETAIN - Reenlistment, Reclassification and
S & T - Science & Technology
SAMAS - Structure and Manpower Allocation System
SIDPERS - Standard Installation/Division Personnel System
SMDR - Structure and Manning Decision Review
T & E - Test & Evaluation
TAADS - The Army Authorization Document System
TAEDP - Total Army Equipment Distribution Program
TAPDB-AE - Total Army Personnel Data Base - Active Enlisted
TAPDB-AO - Total Army Personnel Data Base - Active Officer
TAV - Total Asset Visibility
TCP - Transformation Campaign Plan
TDA - Table of Distribution and Allowances
TDS - Technology Demonstrations
TOE - Table of Organization and Equipment
TOPMIS - Total Officer Personnel Management Information System
TPG - Transformation Planning Guidance
TRADOC - US Army Training and Doctrine Command
UAD - Updated Authorization Document
USFMSA - US Army Force Management Support Agency
* Not an acronym

The Army Force Management Pro
(Simplified)



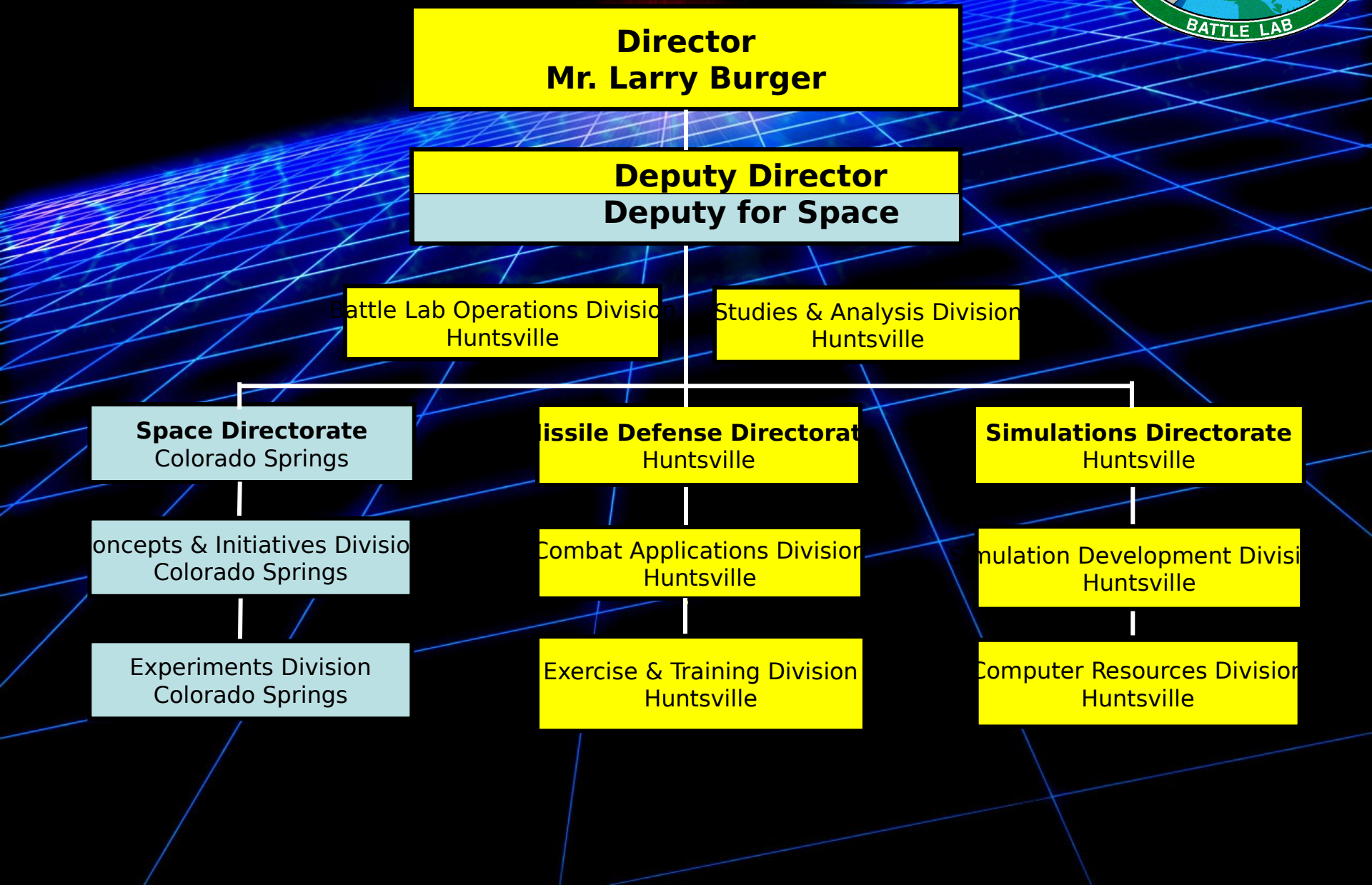
Space and Missile Defense - From Concept to Reality

Battle Lab → **Directorate Combat Development**

Simulations and Analysis Directorate

"Secure the High Ground"

Previous Battle Lab Structur



Space and Missile Defense Battle Lab

- Frontiers Division
- Future Concepts & Architectures Division
- Experiments & Transformation Division
- Space Division
- Missile Defense Division

Created from

- BL-E Combat Apps Div
  FDIC Eval Div
- FDIC Concepts Dev Division
- BL-W C&I Division
- BL-W Exp. Division
- BL-E E&T Division

New Future Warfare Cente

Space and Missile Defense Future Warfare Center
Director / Deputy Directors

- Innovative Ventures Office
- Operations Division

SMD Battle Lab

- Frontiers Division
- Future Concepts & Architectures Division
- Experiments & Transformation Division
- Space Division
- Missile Defense Division

Directorate of Combat Development

- Capabilities Development Division
- Capabilities Integration Division
- Training Development & Doctrine Division
- Force Design & Organization Integration Division

Simulations and Analysis Directorate

- Studies & Analysis Division
- Models & Simulations Division
- Computer Resources Division

Space and Missile Defense

Battle Lab

SMDBL

- Frontiers Division
- Future Concepts & Architectures Division
- Experiments & Transformation Division
- Space Division
- Missile Defense Division

JFCC

FOCTOC II

SSET

Frontiers Division

Huntsville
AL

Wargames Futures
Research Visualization Lab

FY 07 Main Customers
SMDC G3 Ops/PLEX
DCD
STRATCOM
NORTHCOM
OSD/JFCOM
TRADOC

Major Areas of Expertise
- **Wargame Strategy and Plan Design**
- **Wargame Planning and Participation**
- **Analysis of Space Concepts in WGs**
- **Visualization Products**
- **Future Concepts (white papers)**

Major Venues
- **Thors Hammer**
- **Schriever IV**
- **Unified Quest 06**
- **JEFX06**
- **Urban Resolve 2015**

Frontiers Division

Venues & Support

Thor's Hammer II (THII): Interagency Space decision-making game.

Schriever IV (SIV): Air Force Title X Space Wargame.

Unified Quest 06 (UQ06): Army Title X Wargame.

Urban Resolve Army's major integrating experiment of the year. 2015 (UR 2015): Sponsored by US Joint Forces Command;

Joint Expeditionary Force Experiment 06 (JEFX06)

FA40 Frontier Challenge CPX

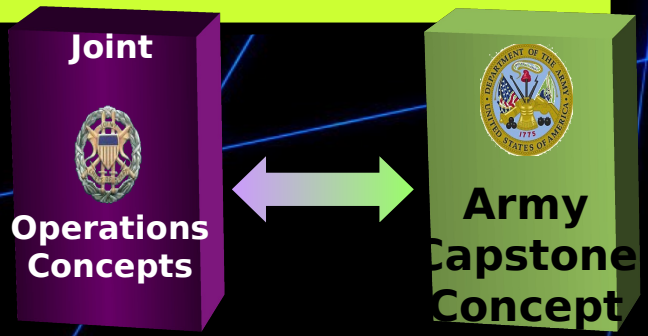
2015 White Paper "Space Power"

Future Concepts and

Archi s Di

Fort Monroe, VA

FY 07 Main Customers
SMDC, OSD, Joint Staff, JFCOM, HQDA, TRADOC FC, other Army MACOMs, Services, and COCOMs.



Joint and Army Concept

- **Major Areas of Expertise**
  - **Concept Development**
  - **Architecture Development**
- **Major Focus Areas**
  - **Space Operations Concept**
  - **Capability Plan 2015-2024**
  - **GMD Capability Plan 2015-2024**
  - **Complete GMD, JFCC-IMD, and JBFSA**
  - **Operational Architectures**
  - **Space Control Architectures**

FY 05 - 06 JOINT CONCEPT DEVELOPMENT

JOINT VISION

Joint Capstone Concept

Capstone Concept for Joint Operations (JS J-7)
1 — APPROVED

24 Total Concepts & 9 JFCOM Prototypes

OPERATING CONCEPTS (JOCs)

- Under Revision — MAJOR COMBAT OPERATIONS (MCO) — 2 (USJFCOM)
- Under Revision — HOMELAND SECURITY (HLS) — 3 (USNORTHCOM)
- Under Revision — STABILITY OPERATIONS — 4 (USJFCOM)
- Under Revision — STRATEGIC DETERRENCE — 5 (USSTRATCOM)
- Under Development — Shaping (JS - JFCOM) — 6
- Under Development — I W Irregular Warfare (JS - JFCOM) — 7

FUNCTIONAL CONCEPTS (JFCs)

- APPROVED Feb 04 — BATTLESPACE AWARENESS (JS J-2) — 8
- APPROVED Feb 04 — FORCE APPLICATION (JS J-8) — 9
- APPROVED Feb 04 — PROTECTION (JS J-8) — 10
- APPROVED Feb 04 — FOCUSED LOGISTICS (JS J-4) — 11
- APPROVED Feb 04 — JOINT COMMAND & CONTROL (JS J-6) — 12
- APPROVED APR 05 — NET-CENTRIC ENVIRONMENT (JS J-6) — 13
- TNG (JS J-1) — 14
- APPROVED AUG 0 — FORCE MGMT (JS J-1) — 13

INTEGRATING CONCEPTS (JICs)

- JOINT FORCIBLE ENTRY OPS (USJFCOM) — 16
- UNDERSEA SUPERIORTY (PACOM) — 17
- PERSISTENT ISR (USJFCOM) — 18
- APPROVED — NET CENTRIC OPERATING ENVIRONMENT — 19 (JS J6)
- APPROVED — JOINT C 2 (USJFCOM) — 20
- APPROVED — JOINT Distribution (ARMY — 2 — 1
- APPROVED — GLOBAL STRIKE (USAF) — 22
- APPROVED — JOINT SEA BASING (NAVY) — 23
- APPROVED — INTEGRATED AIR & MISSILE DEFENSE (USAF) — 24

See CCJO & JFCOM JCD&E Campaign Plan

USJFCOM PROTOTYPES

- JOINT LOGISTICS (CROP) (USJFCOM) — 1
- JOINT FIRES INITIATIVE (JFI) (USJFCOM) — 2
- JOINT INTERAGENCY COORD GRP (JIACG) — 3
- JOINT DEPLOYMENT PROCESS) (USJFCOM) — 4
- OPERATIONAL NET ASSMT (ONA) (USJFCOM) — 5
- EFFECTS BASED OPERATIONS (EBO) (USJFCOM) — 6
- STDG JOINT FORCE HQ (SJFHQ) (USJFCOM) — 7
- COLLAB INFO ENVIRONMENT (CIE) (USJFCOM) — 8
- Family of Interoperable Operational Pictures (USJFCOM) — 9

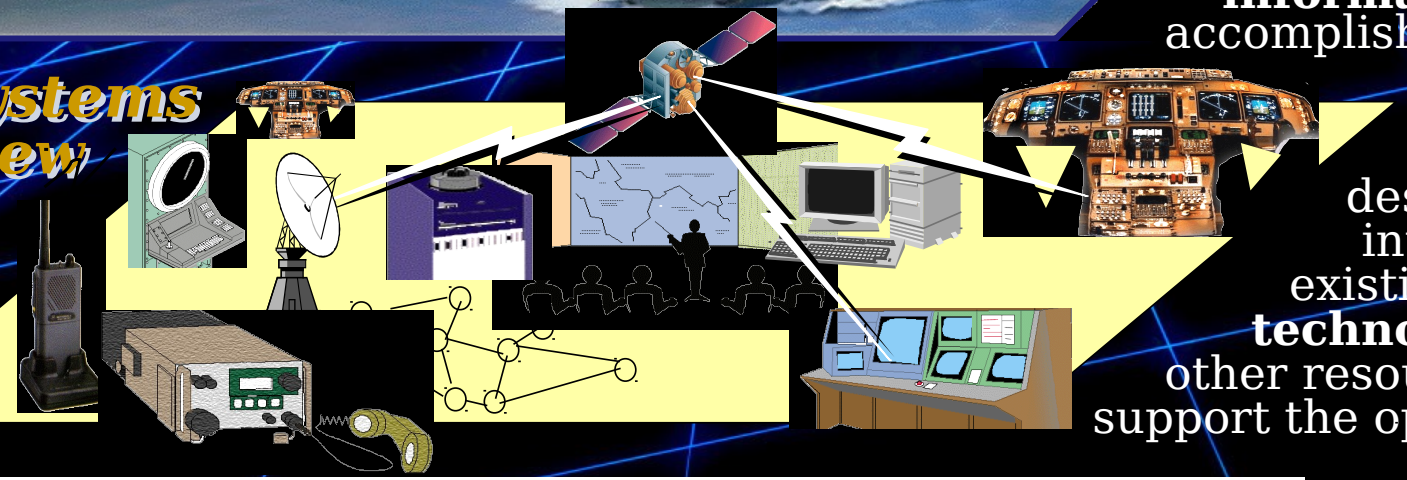
As of 28 Mar 06

Future Concepts and Architectures Division

One Architecture Three Views

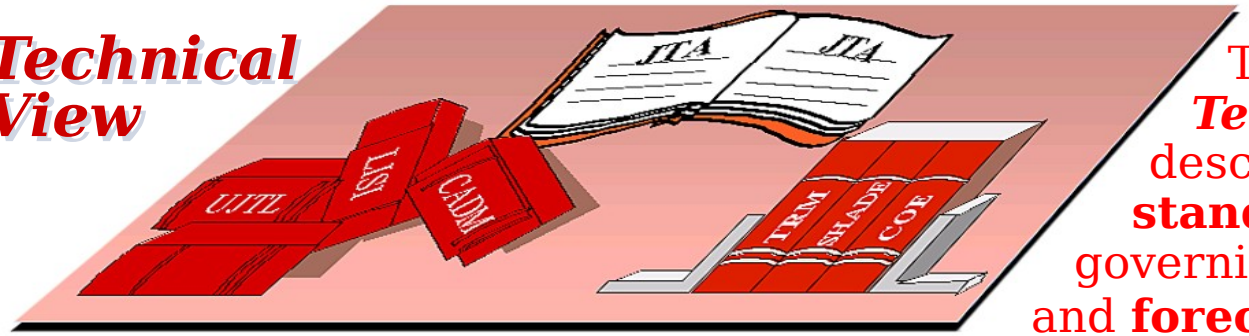
The ***Operation***
describes
interrelates the
operational eleme
tasks and **activities**
information flows requ
accomplish mission operat

Systems View



The ***Systems View***
describes and
interrelates the
existing or postulated
technologies, **system**
other resources intended t
support the operational requi

Technical View



The ***Technical View***
describes the profile of rule
standards, and **conventio**
governing systems implementa
and **forecasts** their future direc

Future Concepts and Architectures

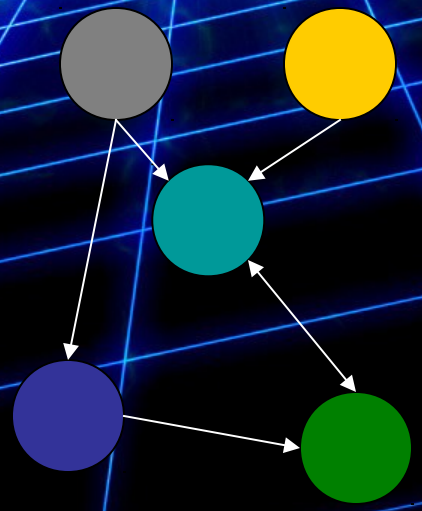
OPERATIONAL ARCHITECTURE

Translates "What We Do" Between Warfighter and Implementer

Concepts

Warfighter Concepts

Architecture



Structured Format Captured at the Data Level

Implementation

- Doctrine
- Organization
  - O&O
- Training
  - MTPs
  - STRAPs
- Materiel
  - ICD
  - CDD
  - CPD
- Leader Development
- Personnel
- Facilities

Translate

FY 06 Work

- Space Concept Capability Plan
- GMD Concept Capability Plan
- Modularity Concepts/Design/Doctrine
- Army Space Control Concept
- Operational Maneuver
- Tactical Maneuver
- Army Functional Concepts
- Space Architecture
- GMD Architecture
- SSE Architecture
- JBFSA Architecture
- Army Space Master Plan

Experiments & Transformation Division

Colorado Springs

FY 07 Main Customers

1st Space BDE
SMDC G3 Ops/PLEX
DCD
STRATCOM
NORTHCOM
OSD/JFCOM
TRADOC
Coalition Partners

ACTD Experiments

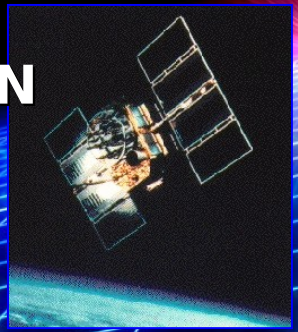
- Major Areas of Expertise
  - Experimentation of Joint Concepts
  - Military Utility Analysis in exercise venues
  - Transformation
  - ACDEP
- Mission Areas Focus: Space, C4ISR, GMD C2
- Core Competencies
  - Concept -to Experiment Crosswalk
  - AUTL/JUTL to Experiment Crosswalk
  - Experiment Analytics Input to Concepts, O&Os, Modularity
  - Army Concept Development & Experimentation Campaign Plans
  - ACTDs

Experiments & Transformation Division

DATA INTEGRATION

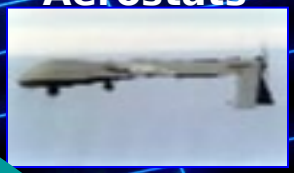
JBFSA JMMO

CONNECTIVITY

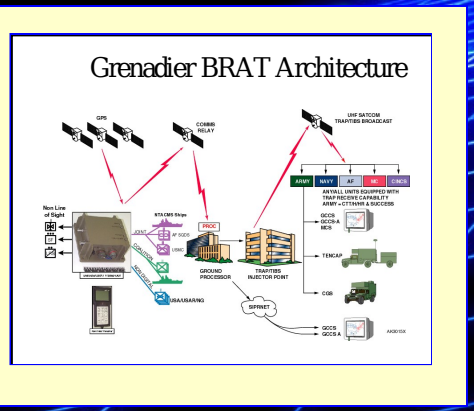


Space Systems
GPRS, MTS

Aerostats



Tactical UAVs

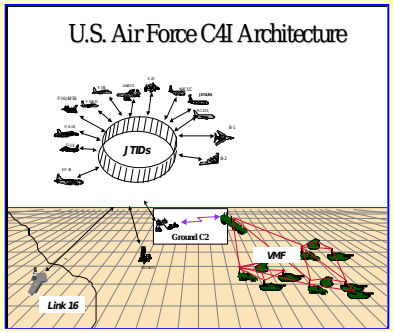


National-Based Systems:
Grenadier Brat, NGT, MBEC

COTS
Technology
"We love the system. It has saved us tremendously by streamlining and improving our service levels."
Lonny Parson, Manager of Transportation
Casey's General Store - 38 OmniTRACS units installed

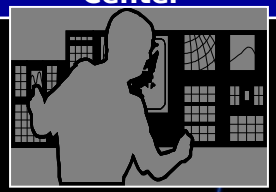
Commercial Systems:
Iridium, OmniTRACS

SIPRNET
JWICS
IBS



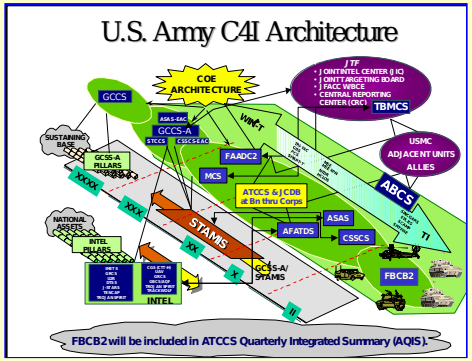
Airborne LOS Systems

USSPACECOM
Blue Force Tracking
Mission Management
Center



Data
Management

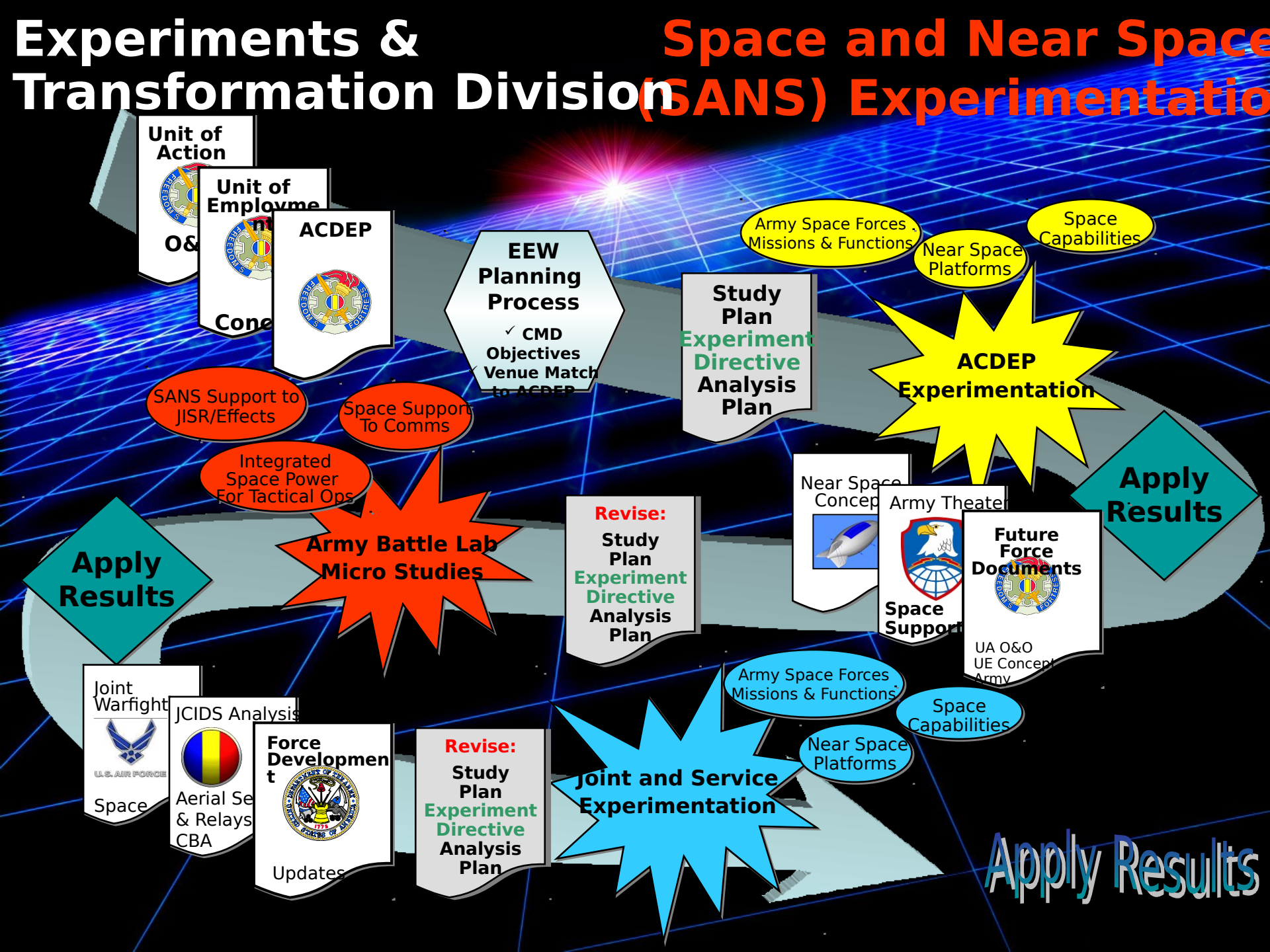
Maritime
Systems



Terrestrial LOS Systems

Experiments & Transformation Division

Space and Near Space (SANS) Experimentation



Experiments & Transformation Division

Transformation

Space Force integration to tactical and operationa

Army Organizations

UEx SSEs Activations

FY04	FY05	FY06	FY07	FY08/09

RC/ARNG ⟶

Integration into TRADOC and AMC

Up to 5 UEy (Active Component) SSEs Activated (no

Funding, Programmatics, Log Support/Sustainment, Product Improvements, Analysis, Training, Doctrine etc.

Space Division

Colorado Springs

FY 07 Main Customers

FORSCOM – 3ID/10th Mtn/101st / 4ID
1st Space BDE
SMDC G3 Ops/PLEX
STRATCOM
NORTHCOM
OSD/JFCOM
TRADOC

ASEDP Prototype Design

Major Areas of Expertise
Current Warfighter Support

New Solutions Assessment

Mission/Task to Technology Crosswalk

Space Prototypes

- **Major Venues**
  - **ASEDP-Army Space Exploitation and Demonstration Program (SMDC)**
- **Mission Areas Focus: Space, C4ISR, GMD C2**
- **Core Competencies**
  - **Produce prototype equipment**
  - **CDE- Planning/Execution/Analysis**
  - **Space technology application & prototyping**

Space Division

ARSST-Tactical Set (Disr ted)

- Global IPSATCOM, INMARSAT, and Iridium connectivity
  - IPSATCOM bandwidth is scalable …. depending on cost
  - Antenna size depends on system location / satellite used
  - Provide black / red communication capabilities
  - KG-235 Inline Encryption Device - NSA 1 Type Certified
- Space Analysis & Situational Awareness applications
  - GPS navigation accuracy
  - Space weather
  - Health and welfare of space assets
  - Satellite over-flight reports
  - Satellite imagery (National and Commercial)
  - 3D/2D visualization / fly-through tools

SATURN v2 Comms Suite

Space Operations Systems (SOS) v2

Broadband reach-back through commercial SATCOM

Space Division

Space Support Element Toolset, Version 2

Mobile Space Tactical Support

SSETv2

1x SATURN Suite

- I-Direct
- INMARSAT
- 1.2m & 1.8m Antennas

Multifunction Printer

Large Plotter

2x NAZ Trailer (1 Toraby)

COMBAT TESTED

SOLDIER APPROVED

- Space Operations System Version 2 (SOSv2)
- SOSv2
- SOSv2 (Rack Mounted)
- SOS – Imagery (SOS-I)

Note: The SSETv2 is a "proven prototype". It is a non-type classified COTS/GOTS-based system developed since 1997 and is combat tested in OIF and OEF

Space Division

Space Applications Technology Utility Reachback Node (SATURN)

Triple Redundancy Global commercial Satellite

Data and Voice-IP Satellite, INMARSAT, and Iridium

Voice through IP provides DSN capability

NSA Type 1 approved encryption device

Global Reachback

Rapidly and easily

Space Division

Space Operations System

2D and 3D visualization and simulations

Battlespace situational awareness

Space order of battle data

Near real time INTEL data

Satellite health and availability

Map/DTED/imagery overlay display

Missile Defense Division

Huntsville

FY 06 Main Customers

FORSCOM – 3ID/10th Mtn/101st / 4ID
1st Space BDE
SMDC G3 Ops/PLEX
FDIC
STRATCOM
NORTHCOM
OSD/JFCOM
TRADOC

Warfighter Support JADOC

- **Major Areas of Expertise**
  - **MD Prototypes**
  - **FOC TOC Testbed**
  - **AWarE/Tiger**
- **Major Venues –National Capitol Region**
- **Mission Areas Focus: GMD**
- **Core Competencies**
  - **CDE- Planning/Execution/Analysis**
  - **Space technology application & prototyping**
  - **ACTD Operational Management**
  - **GMD C2 SW HFE and Exercise Analysis**

Missile Defense Division

Joint Air Defense Operational Center

- Siting tool & analysis support
- High detail map & database integration of defended asset list for the NCR & other CONUS sites
- Sea island support in support of 1st AF
- Multi-level training and mission rehear

Missile Defense Division

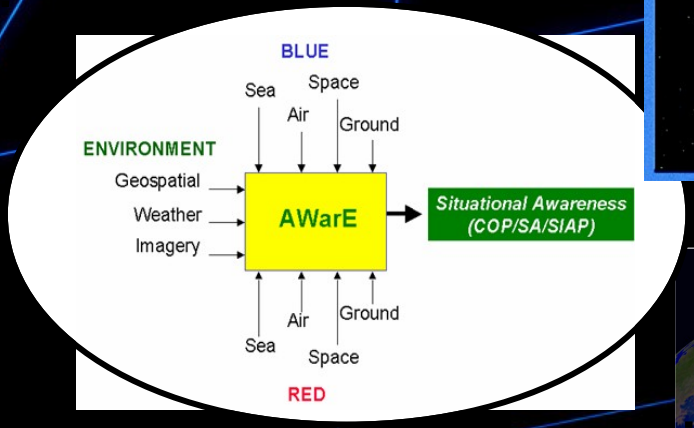
Joint-Based Expeditionary Connectivity Centers

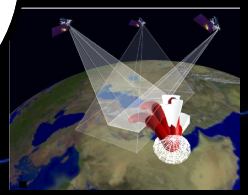
JBECC systems deploy to provide regional air defense command and control in support of Operatio

Missile Defense Division

Advance Warfare Environment Ongoing Support and Analysis

Open architecture, windows-based BMC4I software prototype platform, supports collaborative mission planning in a net-centric environment and provides an unprecedented view of the battle space in both 3-D and 2-D.





Space and Missile nse

Battle Lab

FOC TOC

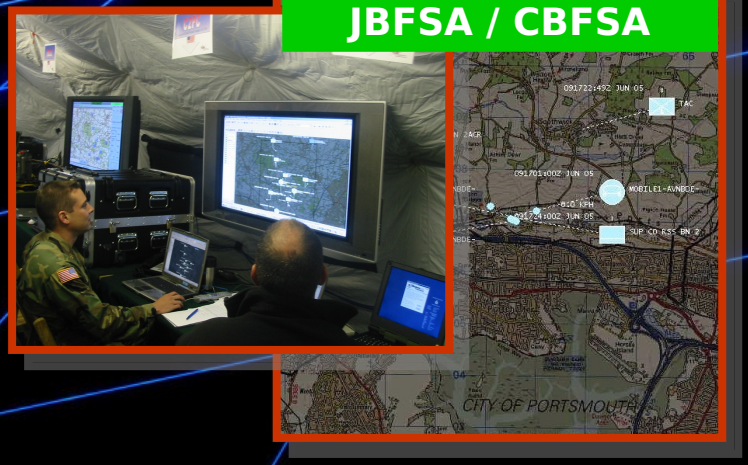
Prototypes

SSET

Combat Development

UA /UE

JBFSA / CBFSA



Technical Services

Transformation

Integration

COSMIC

Concepts

Operations

Space

Missile

Integration

Capabilities

Combat Development

Force Development

System Engineering

DOTMLPF

COSMIC

VMOC
Virtual Mission Operations Center

MULTI-USE GROUND STATION
MUGS
Network Centric Operations

Space and Missile Defense Battle Lab

Space and Missile Defense - From Concept to Reality